REMARKS

In reviewing all the references that the Examiner has cited, it is apparent that most of these are dealing with "tunneling". However, it is believed that the implementation of tunneling that we are providing is a unique approach to this issue, which is different than the standard implementation of "tunneling" provided in all of the references.

The general objective of tunneling, as explained in these references, is to provide secure communication between a sending station and a receiving station across a public network. However, implementing tunneling that is described in all the references is a single tunnel connecting the two sites. Specifically, the first station being in a first site, and the second station being in a second site, both connected to the Internet via and a single tunnel which exists between the two sites and therefore the station utilizes that single tunnel between the two sites. This can best be shown in Fig. 19 of the Barlett publication 2003/0177396. However, this is common to all of the references cited.

The concept provided in all of these references by "tunneling" is to encrypt the information within that single tunnel. As some of the references discuss, the encryption may involve adding of another source address and destination address while maintaining the original source and destination addresses encapsulated within the encryptions. However, in all cases there is a single tunnel between one site and another site.

The approach to "tunneling" in the present invention, is a uniquely different approach. We are dealing with a situation where there is more than a single tunnel between one site and another site. The tunnel comprises a first link connecting the source site to the network, and a second link connecting the destination site to the network. The tunnel includes one link on the

source site, and one link on the destination site. However, there can be more than one tunnel connecting the source site with the destination site.

The present invention therefore relates to a multi-homing device. This is defined in our specification where there are multiple tunnels available between one site and another site. The first site and the second site are both connected through a common external network. Each site has at least a single link connecting it to that external network through the multi-homing device of that site. Each tunnel over the external network is connecting one link in the first site and one link in the second site. Furthermore, there is more than a single tunnel between one site and another site.

It is firstly believed that none of the references are directed to this type of a system. They are all directed to a tunneling of the type that they describe, namely, a single tunnel between one site and the other, and providing encapsulation of the packet information traveling on that single tunnel.

The concept of "translation" of the present invention is one of "Address Translation". What our patent describes is that at a particular site there can be multiple stations. For example, there may be N internal stations on a site which can access the external network.

Assuming at another site, there are M internal stations which can also access the same external network.

Assume that at the first site, there are K links between that site and the external network. Assume at the second site there are L links associating that second site with the external network.

As a result, there are K x L potential tunnels between these two sites.

Additionally, on the first site, each of the N stations has its own internal network address. In addition, there is associated with each of those N stations, a separate tunnel address for each of the K links available connecting that site to the external network, or N x K tunnel addresses.

Likewise, at the second site each of the M stations has its own internal address. In addition, each of those M stations has associated with it a separate tunnel address for each of the L links available to connect that site to the external network, or M x L tunnel addresses.

Accordingly, on the first site internal network, each of the K links allocates N tunnel addresses per each internal station. On the second site internal network, each of the L links allocates M tunnel addresses per each internal station.

Therefore, when transmitting communication between, for example, station one at site N (N1), and station 1 on site M (M1), and selecting links K1 and L1 on the respective first and second sites, the modification of addresses will be from N1 and M1 station addresses to N1K1 and M1L1 tunnel addresses.

It is believed that this entire approach is unique and in no way is even suggested by any of the references. Furthermore, it is believed that it would be inapplicable to most if not all of these references since the references only have a single tunnel between two sites and do not provide for the availability of selection of tunnels. Furthermore, none of them teach the ability to from a terminal by selecting an individual link at a first site connecting it to a network with an individual link at a second site connecting that site to the external network, and where at least one site has more than one such link connecting it to the network.

In order to more clearly bring out this concept of tunneling, and this particular unique concept of tunneling which is applicable to the unique multi-homing device of the present invention, each of the independent claims, and some of the dependent claims, have been

amended to more clearly bring out these features. Specifically, the clarification of the multi-homing device has been made. It has been clarified that we are dealing with more than a single tunnel between one site and another site. It has also been clarified that the tunnels can be formed with any one link from one site and any one link from another site and these connections can be altered to produce other tunnels connecting those two sites.

Furthermore, the address translation feature of the tunneling aspect has further been clarified in the claims. The claims have been clarified to point out that an association is made between each of the stations at a site and each of the links at that site and a separate tunneling address provided for each of those combinations.

Taking those unique associations at each site in conjunction with the ability to mix and match links, provides the unique Address Translation of the present invention.

More specifically, with respect to each of the rejections, claim 1 has been rejected under 35 U.S.C. § 102(e) as being anticipated by Barlett. Barlett does not disclose a multi-homing device at all. Throughout Barlett, all sites have a single link access to the network and different tunnels from one site that are connecting that site to a different destination (either a different site, or a different application in site).

With respect to the address translation understanding of tunneling, it should first be noted that in paragraph 0040, Barlett defines tunneling in the traditional manner of encrypting the packets on a single transmission path. Nowhere does he describe the Address Translation of the present invention.

To the opposite, referring to paragraph 0059, by way of example, Barlett defines tunneling as either IPSEC (using AH or ESP), L2TP or PPTP. All of these are encapsulation

methods which wrap the original packet in a tunneling wrapper. The wrapper is not specific per each host as the IP header with the host details is encapsulated in the tunneled data.

Our patent does not use any wrapper, but only modifies the network address between the internal network address (host address of the site) and the tunnel address (the associated tunnel addresses of these hosts according to the selection of two links that form the tunnel, one link from each site). The correlation between these station addresses and the tunnel addresses is what the translation is about. The information of these are stored in both the local and remote station tables.

Claim 1 has been amended to more clearly bring out these distinctions as recited above.

Claims 2 and 3 were rejected under 35 U.S.C. § 103 in view of Barlett and adding the reference to Neale. Firstly, claim 2 has been further amended and claims 2 and 3 depend on claim 1 and claim 1 is believed to be distinguished over Barlett as hereintofore explained.

The addition of Neale, however, does not add much since Neale, just like Barlett is using the encapsulation method for tunneling and not the IP address replacement method of our patent. This is clearly specified in Neale, paragraphs 0196-0918.

Claims 4, 5, 7, 11-13 and 15 were rejected under 35 U.S.C. § 102(b) as being anticipated by Halme. Halme again teaches the traditional tunneling method of encapsulation. This is specifically the case since Halme uses the IPSEC as the tunneling method which is an encapsulation method. The paragraph 0043 relied upon by the Examiner, only mentions the standard encapsulation methods of modifying the IP addresses. However, this is simply a single IP address for an associated service provider connection. There is no multiple links available between each site and the common network, there is no selection of one link from one site and the other link from a different site to form multiple available tunnels, there is no teaching of the

individual association of a particular station with each of the links available to it at its site. On the contrary, the same tunnel address may be used for multiple internal stations using the encapsulation method of Halme.

Each of the independent claims in this group have been amended and each of the dependent claims depend from these and Halme does not provide the teachings of the present amended claim.

With respect to subclaims 6 and 8 the Examiner further cited Tuomenoksa. It is believed that this does not provide any additional assistance as this reference does not describe IP address replacement nor does it have a distinct IP address for internal station nor does it have a selected link, nor any of the other features as the present claimed amendments point out.

Claims 9 and 14 were rejected under 35 U.S.C. § 103 further citing the reference of Lubbers.

Lubbers does not discuss these issues as well. In addition, Lubbers is describing a selection of a destination node (paragraph 0064, see last sentence) and not a selection of a tunnel to a destination site.

In connection with claim 16, the Examiner has rejected this claim under 35 U.S.C. § 102(e) as being anticipated by Dilon.

Similar to the Barlett reference discussed above, Dilon discloses an encapsulating tunnel in the traditional sense. Namely, that the received IP packet is encapsulated into another IP packet for transmission. Fig. 5 shows this very clearly. Hence, the replacing of the station address with the tunnel address clearly does not take place in this reference at all.

Furthermore, the association of each station with a separate address for each link, the ability to combine a link from one site and the link from another site to form a tunnel, the ability

to have multiple tunnels between two sites, and all of the previous arguments which have now been included in the amended claims are not at all found in this reference.

Claim 18 was rejected as anticipated by Neale. Neale has previously been discussed as relating to the standard encapsulation method and claim 18 has been amended to bring out each of the features described above. Claims dependent on claim 18 carry all of the features of claim 18.

Claim 28 has been rejected using the reference of Tuomenoksa. As heretofore explained, Tuomenoksa is using encapsulation in order to forward tunnel traffic as described in paragraph 0097. Our patent uses a unique tunneling of address replacement using one instead of the other not an encapsulation.

Each of the other claims have been rejected based upon one or more of the above mentioned references and each of those have been discussed above and amendments have been add to each of the independent claims (and some of the dependent claims) to bring out the aforementioned distinctions as presented and argued above and each are believed patentable over these references given alone or in combination.

The Examiner has further identified additional references without applying them. It is believed that none of these relate to the present invention. Specifically, in Craddock, the elements have a single tunnel between one another. In addition there is no IP address translation and clearly not as we presently claim it.

Lau discusses selection of paths in a whole network. It does not describe IP translation modifications in tunnels or allocation of IP addresses per tunnel, per internal station address.

Minami discusses a network interface card connected to a single host. It does not relate to our system and device claim which have been currently amended to bring out the features of

the invention. The tunneling mentioned in this application is again an IPSEC tunnel that again uses encapsulation and not IP address replacement.

Pham discusses a selection of a processor and not a selection of a link/tunnel towards a destination.

The Examiner had also rejected claims 1, 4, 17, 18 and 28 under 35 U.S.C. § 112, as being indefinite. The Examiner indicated that "a single link" was confusing. The claims have been amended to indicate that in one site it is "a single link" and at the other site it is "another single link". It is believed this further clarifies the claim language.

The Examiner also rejected claim 17 under 35 U.S.C. § 101 as being non-statutory subject matter. Claim 17 has been amended in standard fashion in accordance with the regularly accepted Beuregard et al. type of claims, which are clearly acceptable.

In view of the remarks set forth above, this application is in condition for allowance which action is respectfully requested. However, if for any reason the Examiner should consider this application not to be in condition for allowance, the Examiner is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper may be charged to Deposit Account No. 50-1290.

Respectfully submitted,

/Samson Helfgott/
Samson Helfgott
Reg. No. 23,072

CUSTOMER NUMBER 026304
Telephone: (212) 940-8683
Fax: (212) 940-8986
Docket No.: RADW 20.412 (101092-00073)
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